

REMARKS

Withdrawal of Finality of Office Action

The Examiner is respectfully requested to withdraw the finality of the Office Action since the Examiner nowhere provides any reasons as to why the various method claims are not patentable.

Status of the Claims

Claims 1, 4, 6-12 and 24-55 are pending in the present application. Claim 3 has been cancelled and the subject matter thereof has been incorporated into claim 1. Claim 4 has been amended to delete reference to cancelled claim 3. No new matter or new issues requiring further consideration or search has been presented.

Rejection of Claims 1, 4, 6-12 and 24-55 Under 35 U.S.C. 103(a) Over EP 557 627 to Aoyama and U.S. Patent 5,811,148 to Chiu et al. in View of JP 8-173055 to Hoshida and Further in View of JP 8-266230 to Yamane et al. and JP 9-322 716 to Kobayashi et al.

Claims 1, 4, 6-12 and 24-55 are rejected by the Examiner under 35 U.S.C. 103(a) over EP 557 627 to Aoyama and U.S. Patent 5,811,148 to Chiu et al. in view of JP 8-173055 to Hoshida and further in view of JP 8-266230 to Yamane et al. and JP 9-322 716 to Kobayashi et al. for the reasons set forth on pages 3-5 of

the Office Action. This rejection is respectfully traversed. Reconsideration and withdrawal thereof are requested.

Claim 3 is free of this rejection, and the subject matter thereof has been incorporated into claim 1. Accordingly, reconsideration and withdrawal of this rejection are respectfully requested.

Rejection of Claims 1, 3, 4, 6-12 and 24-55 Under 35 U.S.C. 103(a) Over EP 557 627 to Aoyama and U.S. Patent 5,811,148 to Chiu et al. in View of JP 8-173055 to Hoshida and Further in View of JP 8-266230 to Yamane et al. and JP 9-322 716 to Kobayashi et al. and Further in View of JP 5-192091 to Tokuhiko

Claims 1, 3, 4, 6-12 and 24-55 are rejected by the Examiner under 35 U.S.C. 103(a) over EP 557 627 to Aoyama and U.S. Patent 5,811,148 to Chiu et al. in view of JP 8-173055 to Hoshida and further in view of JP 8-266230 to Yamane et al. and JP 9-322 716 to Kobayashi et al. and further in view of JP 5-192091 to Tokuhiko et al. for the reasons set forth on pages 5-6 of the Office Action. This rejection is respectfully traversed. Reconsideration and withdrawal thereof are requested.

The Present Invention

The present invention as recited in claim 1, as amended, relates to a productivity improver for poultry, comprising (i) a polymannose having a molecular weight distribution in which a polymannose having the molecular weights ranging from 1.8×10^3 to 1.8×10^5 accounts for 70% or more, the polymannose having a viscosity of 130 cps or less at 5°C in a 5% by weight aqueous solution as determined by Brookfield viscometer, and (ii) a polyphenol compound; and (iii) a delipidated rice bran.

The present invention further relates to numerous methods utilizing the productivity improver of claim 1. For instance, claim 24 is directed to a method of improving productivity for hens that lay eggs or edible chicken, which comprises feeding the productivity improver of claim 1 to hens that lay eggs or to edible chicken. The method of claim 25 increases the life span of hens that lay eggs. Claim 27 recites a method that prevents a decrease in Haugh unit of eggs produced by hens that lay eggs during storage. Claim 28 recites a method that prevents a decrease in vitamin E content of eggs produced by hens that lay eggs during storage. Claim 29 recites a method that prevents a decrease in highly unsaturated fatty acid content of eggs produced by hens that lay eggs during storage. Claim 37 recites a method wherein cholesterol content of chicken meat produced by edible chickens is reduced. Claim 52 recites a method for

preventing an increase in the K value of chicken meat of edible chickens.

These are a few examples of the methods using the productivity improver of claim 1. Other embodiments of the claimed methods are recited in the claims.

The Rejection

The Examiner's position is set forth on pages 5-6 of the Office Action. Briefly, The Examiner concedes that none of Aoyama, Chiu, Hoshida, Yamane and Kobayashi disclose the use of defatted rice bran as a useful component in chicken feed as recited in claim 3. However, because Tokuhiko discloses the use of defatted rice bran as a useful component of chicken feed, the Examiner argues that the artisan would be motivated to use the claimed defatted rice bran in chicken feed. The Examiner supports this position by basically arguing that since the components have been used individually, it would be obvious to combine the components together.

The Examiner nowhere provides any reasons as to why the method claims are not patentable.

Distinctions Between the Present Invention and the Prior Art

Applicants respectfully submit that the Examiner's position is a hindsight reconstruction of the prior art in view of Applicants' own disclosure. The Tokuhiro reference fails to teach or suggest the use of defatted rice bran together with polymannose and a polyphenol compound. Thus, contrary to the position taken by the Examiner, there is no motivation for obtaining the present invention in the prior art.

Moreover, although the Tokuhiro reference teaches defatted rice bran as one component of chicken feed, the Tokuhiro reference also teaches that the effective amount of the components thereof is a 1:1 mixture of pyrolignous acid and sea algae powder. Thus, the defatted rice bran is simply referred to as one of the various components for the basic feed. Accordingly, the use of defatted rice bran together with polymannose and polyphenol as claimed in the present invention is neither taught nor suggest by the Tokuhiro reference.

The Examiner should further note that many patented compositions are combinations of known ingredients. Simply because the individual components of the compositions are known *per se* is not a sufficient basis for combining the components. At best, the Examiner has presented an "obvious to try" rejection, and such logic has clearly been rebuked by the

courts. Thus, the rejection of the claims under 35 U.S.C.103(a) should be withdrawn by the Examiner.

Assuming, *arguendo*, the Examiner has established a prima facie case of obviousness, Applicants have conducted suitable comparative testing to rebut any prima facie case of obviousness.

More specifically, Applicants have shown that unexpectedly superior results are obtained by the combination of the claimed three (3) components.

Discussion of Test Example 1

The Examiner's attention is directed to Test Example 1 on pages 24-32 of the specification, and more specifically, to Table 7 on page 31 of the specification. Table 7 is reproduced below for the Examiner's convenience:

Table 7. Number of Eggs Produced

Poultry House	4M (ct)	8M(ct)	12M (ct)
A	348,242	776,992	1,102,934
B	350,152	778,862	1,103,764
C	359,279	783,945	1,142,892
D	361,321	791,811	1,188,212
E	369,111	801,234	1,203,412
F	331,456	732,912	1,099,231
G	330,289	730,234	1,071,923
H	295,789	715,293	1,053,962
I	295,589	714,941	1,054,111
J	295,242	715,026	1,054,265
K	295,045	715,002	1,053,946
L	295,089	714,376	1,053,412
M	295,012	714,672	1,052,934
N	294,987	714,913	1,054,555
O	295,103	714,586	1,054,321
P	295,142	714,991	1,053,333
Q	295,079	714,890	1,053,343
R	295,183	714,897	1,053,299

The Examiner's attention is directed to Poultry Houses D and E of Table 7. Poultry Houses D and E utilize the claimed three (3) components. The number of eggs produced by Poultry Houses D and E are remarkably and unexpectedly increased as compared to (i) Poultry House B which uses polymannose and a polyphenol compound, (ii) Poultry House A which uses polymannose alone, (iii) Poultry House H which uses polyphenol alone, and (iv) Poultry House J which uses delipidated rice bran alone.

Similarly, the Examiner's attention is directed to Tables 8 and 10 on pages 31 and 32, respectively, of the specification, which are reproduced below the Examiner's convenience:

Table 8 Weight of Produced Eggs

Poultry House	4M(kg)	8M(kg)	12M(kg)
A	21,207.9	49,649.8	72,573.1
B	21,464.3	50,002.9	73,069.2
C	22,383.1	50,956.4	76,573.8
D	22,727.1	51,942.8	79,966.7
E	23,401.6	52,801.3	81,711.7
F	19,555.9	45,440.5	70,680.6
G	19,784.3	45,639.6	69,675.0
H	17,303.7	43,775.9	66,505.0
I	17,321.5	44,111.9	66,514.4
J	17,183.1	43,974.1	66,840.4
K	17,201.1	44,115.6	66,398.6
L	17,321.7	44,219.9	66,681.0
M	17,258.2	44,095.3	66,545.4
N	17,404.2	44,181.6	66,437.0
O	17,263.5	43,732.7	66,527.7
P	17,265.8	43,971.9	66,676.0
Q	17,232.6	44,037.2	66,360.6
R	17,297.7	43,894.7	66,463.2

Table 10 Change in Vitamin E Content

Poultry House	Immediately After Egg Production	After 2 Weeks of Storage
A	3.2	2.3
B	3.1	2.5
C	3.3	2.7
D	3.2	2.9
E	3.2	3.2
F	3.1	2.2
G	3.1	2.1
H	3.4	2.0
I	3.1	2.0
J	3.2	2.0
K	3.3	1.7
L	3.2	2.1
M	3.1	2.0
N	3.4	1.9
O	3.0	2.0
P	3.3	1.8
Q	3.4	1.9
R	3.1	1.7

The numerical values are expressed in mg based on 100 g of egg yolk solution.

The Examiner's attention is directed to Poultry Houses D and E of Table 8. Poultry Houses D and E utilize the claimed three (3) components. The weight of the eggs produced by Poultry Houses D and E are remarkably and unexpectedly increased as compared to (i) Poultry House B which uses polymannose and a polyphenol compound, (ii) Poultry House A which uses polymannose alone, (iii) Poultry House H which uses polyphenol alone, and (iv) Poultry House J which uses delipidated rice bran alone.

The Examiner's attention is directed to Poultry Houses D and E of Table 10. Poultry Houses D and E utilize the claimed three (3) components. The change in vitamin E content produced by Poultry Houses D and E are remarkably and unexpectedly increased as compared to (i) Poultry House B which uses polymannose and a polyphenol compound, (ii) Poultry House A which uses polymannose alone, (iii) Poultry House H which uses polyphenol alone, and (iv) Poultry House J which uses delipidated rice bran alone.

Discussion of Test Example 2

The Examiner's attention is directed to Test Example 2 on pages 33-38 of the specification, and more specifically, to Table 13 on page 37 of the specification. Table 13 is reproduced below for the Examiner's convenience:

Table 13 Change in EPA Content

Poultry House	Immediately After Egg Production	After 2 Weeks of Storage
a	103.7	98.9
b	104.0	100.2
c	104.3	102.1
d	104.3	103.0
e	104.5	104.3
f	103.9	96.5
g	103.4	96.0
h	104.1	83.5
i	103.8	84.0
j	103.8	83.9
k	104.0	85.1
l	103.2	83.9
m	103.5	84.0
n	103.9	84.2
o	104.1	84.0
p	104.2	83.4
q	104.4	83.5

The numerical values are expressed in mg based on 100 g of egg yolk solution.

The Examiner's attention is directed to Poultry Houses d and e of Table 13. Poultry Houses d and e utilize the claimed three (3) components. The change in EPA content produced by Poultry Houses d and e is remarkably and unexpectedly increased as compared to (i) Poultry House b which uses polymannose and a polyphenol compound, (ii) Poultry House a which uses polymannose alone, (iii) Poultry House h which uses polyphenol alone, and (iv) Poultry House j which uses delipidated rice bran alone.

Similarly, the Examiner's attention is directed to Test Example 2 on pages 33 - 38 of the specification, and more

specifically, to Table 14 on page 38 of the specification. Table 14 is reproduced below for the Examiner's convenience:

Table 14 Change in Vitamin E Content

Poultry House	Immediately After Egg Production	After 2 Weeks of Storage
a	3.0	2.3
b	3.2	2.6
c	3.1	2.9
d	3.1	3.0
e	3.2	3.2
f	3.2	2.0
g	3.1	1.9
h	3.0	1.5
i	3.0	1.7
j	3.1	1.6
k	3.2	1.6
l	3.0	1.7
m	3.2	1.6
n	3.2	1.6
o	3.0	1.5
p	3.1	1.7
q	3.2	1.6

The numerical values are expressed in mg based on 100 g of egg yolk solution.

The Examiner's attention is directed to Poultry Houses d and e of Table 14. Poultry Houses d and e utilize the claimed three (3) components. The change in vitamin E content produced by Poultry Houses d and e is remarkably and unexpectedly increased as compared to (i) Poultry House b which uses polymannose and a polyphenol compound, (ii) Poultry House a which uses polymannose alone, (iii) Poultry House h which uses

polyphenol alone, and (iv) Poultry House j which uses delipidated rice bran alone.

Discussion of Test Example 3

The Examiner's attention is directed to Test Example 3 on pages 39-45 of the specification, and more specifically, to Table 18 on page 43 of the specification. Table 18 is reproduced below for the Examiner's convenience:

Table 18 Weekly Body Weight Gain

Group	g
AA	469.6
BB	472.3
CC	475.1
DD	482.3
EE	487.9
FF	465.8
GG	466.3
HH	461.6
II	462.5
JJ	463.1
KK	460.2
LL	460.8
MM	462.4
NN	461.3
OO	462.1
PP	461.2
QQ	460.0

The Examiner's attention is directed to Groups DD and EE of Table 18. Groups DD and EE utilize the claimed three (3) components. The weekly body weight gain for Groups DD and EE is remarkably and unexpectedly increased as compared to (i) Group

BB which uses polymannose and a polyphenol compound, (ii) Group AA which uses polymannose alone, (iii) Group HH which uses polyphenol alone, and (iv) Group JJ which uses delipidated rice bran alone.

Similarly, the Examiner's attention is directed to Table 19 on page 44 of the specification. Table 19 is reproduced below for the Examiner's convenience:

Table 19 Cholesterol Content

Group	Breast Meat	Leg Meat	Chicken Fat
AA	53.1	71.2	179.9
BB	51.1	68.2	172.1
CC	50.3	61.4	164.3
DD	49.5	60.3	162.7
EE	48.7	59.1	160.3
FF	61.3	69.6	185.7
GG	55.8	68.0	181.3
HH	71.7	85.3	223.8
II	72.0	86.0	227.6
JJ	71.2	85.9	233.2
KK	70.3	88.2	235.4
LL	70.1	85.8	215.1
MM	70.3	85.1	218.5
NN	69.8	85.4	220.3
OO	71.3	86.3	220.0
PP	70.8	89.3	223.4
QQ	70.2	88.2	238.3

The numerical values are expressed in mg based on 100 g of chicken meat or chicken fat.

The Examiner's attention is directed to Groups DD and EE of Table 19. Groups DD and EE utilize the claimed three (3) components. The cholesterol content for Groups DD and EE is remarkably and unexpectedly reduced as compared to (i) Group BB which uses polymannose and a polyphenol compound, (ii) Group AA

which uses polymannose alone, (iii) Group HH which uses polyphenol alone, and (iv) Group JJ which uses delipidated rice bran alone.

The Examiner's attention is directed to Table 20 on page 44 of the specification. Table 20 is reproduced below for the Examiner's convenience:

Table 20 K Value of Chicken Meat after 10 Days of Storage

Group	Breast Meat	Leg Meat
AA	32.1	34.9
BB	30.3	29.6
CC	25.1	22.9
DD	22.2	21.2
EE	19.8	20.3
FF	36.7	38.1
GG	34.8	36.5
HH	55.1	56.0
II	55.3	55.4
JJ	55.2	54.7
KK	54.9	56.3
LL	54.5	56.1
MM	55.2	55.9
NN	54.9	54.3
OO	55.0	55.7
PP	55.3	54.7
QQ	55.1	55.8

The Examiner's attention is directed to Groups DD and EE of Table 20. Groups DD and EE utilize the claimed three (3) components. The K value content for Groups DD and EE is remarkably and unexpectedly suppressed as compared to (i) Group BB which uses polymannose and a polyphenol compound, (ii) Group

AA which uses polymannose alone, (iii) Group HH which uses polyphenol alone, and (iv) Group JJ which uses delipidated rice bran alone.

The Examiner's attention is directed to Table 21 on page 45 of the specification. Table 21 is reproduced below for the Examiner's convenience:

Table 21 Change in TBA Value after 10 Days Storage

Group	Breast Meat	Leg Meat	Chicken Fat
AA	0.35	0.34	0.30
BB	0.30	0.29	0.26
CC	0.22	0.20	0.21
DD	0.19	0.17	0.18
EE	0.15	0.15	0.14
FF	0.37	0.38	0.36
GG	0.38	0.38	0.36
HH	0.42	0.41	0.41
II	0.44	0.40	0.42
JJ	0.40	0.43	0.43
KK	0.43	0.41	0.41
LL	0.41	0.44	0.42
MM	0.44	0.42	0.41
NN	0.46	0.42	0.40
OO	0.43	0.40	0.45
PP	0.44	0.42	0.43
QQ	0.45	0.40	0.45

The Examiner's attention is directed to Groups DD and EE of Table 21. Groups DD and EE utilize the claimed three (3) components. The TBA value for Groups DD and EE is remarkably and unexpectedly suppressed as compared to (i) Group BB which uses polymannose and a polyphenol compound, (ii) Group AA which uses

polymannose alone, (iii) Group HH which uses polyphenol alone, and (iv) Group JJ which uses delipidated rice bran alone.

The Examiner's attention is directed to Table 22 on page 45 of the specification. Table 22 is reproduced below for the Examiner's convenience:

Table 22 Change in POV Value after 10 Days Storage

Group	Breast Meat	Leg Meat	Chicken Fat
AA	0.85	0.88	1.12
BB	0.73	0.77	0.99
CC	0.62	0.59	0.88
DD	0.57	0.52	0.78
EE	0.53	0.48	0.71
FF	1.03	1.09	1.37
GG	0.92	0.97	1.28
HH	1.55	1.52	1.78
II	1.52	1.53	1.80
JJ	1.52	1.56	1.75
KK	1.48	1.50	1.79
LL	1.50	1.48	1.77
MM	1.49	1.50	1.76
NN	1.55	1.52	1.75
OO	1.48	1.54	1.77
PP	1.49	1.55	1.81
QQ	1.50	1.53	1.80

The Examiner's attention is directed to Groups DD and EE of Table 22. Groups DD and EE utilize the claimed three (3) components. The POV value for Groups DD and EE is remarkably and unexpectedly suppressed as compared to (i) Group BB which uses

polymannose and a polyphenol compound, (ii) Group AA which uses polymannose alone, (iii) Group HH which uses polyphenol alone, and (iv) Group JJ which uses delipidated rice bran alone.

Conclusion

Applicants respectfully submit that the Examiner has not established a prima facie case of obviousness since there is no motivation to combine the teachings in the manner suggested in order to obtain the present invention. Alternatively, Applicants respectfully submit that they have rebutted any prima facie case of obviousness established by the Examiner in view of the comparative showings in the present specification.

Moreover, since the Examiner has not provided any reasons as to why the method claims are rejected, an indication of allowable subject matter for the method claims or withdrawal of the finality of the Office Action is respectfully requested.

Pursuant to 37 C.F.R. §§ 1.17 and 1.136(a), Applicant(s) respectfully petition(s) for a two month extension of time for filing a reply in connection with the present application, and the required fee of \$410.00 is attached hereto.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17; particularly, extension of time fees.

Respectfully submitted,

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